

ON GEOPHILUS ATTENUATUS, SAY, OF THE CLASS
CHILOPODA.

By O. F. COOK.

THE identification of this species has not proved an easy task. Dr. Wood says of his *Mecistocephalus fulvus*: "It may possibly be *Geophilus attenuatus*, but that species can never be determined from Say's description." The late Charles H. Bollman has, however, attempted an identification,¹ which places as synonyms of *G. attenuatus* the following species: *G. bipuncticeps*, Wood, *G. georgianus*, Meinert, and *G. perforatus* (McNeill). It is not necessary here to touch upon the question of the identity of *G. georgianus* and *G. perforatus* with *G. bipuncticeps*, further than to agree that they are at least related species. The ground on which Mr. Bollman based the identification of *G. bipuncticeps* with *attenuatus*, was that *bipuncticeps* was the only species of the southeastern region which could bear Say's description. Lest this view should be taken as final, it seems best to publish the fact that there exists in the region indicated another animal to which Say's description is much more applicable.

In interpreting Say's language it should be taken into consideration that he gives closer attention to the colors than to the other characters, and that his color descriptions of Myriapoda are absolute, his acquaintance with the group not being sufficient to enable the use of many comparative differences. The colors of Geophilidæ vary indeed, but within limits and in a definite direction. Young and recently molted individuals are pale and become darker with age. The strictly subterranean species usually remain very light, while those living under stones or bark of decaying trees have a more pronounced coloration. Thus, between white or pale specimens the exact shade may be of little importance in specific diagnosis, but a deep color, such as a reddish-brown, is quite a different matter. Say calls *Geophilus rubens*,² a much deeper-colored species, "red," but not brown, while *Scolopocryptops*

¹ Bull. 46, U. S. Nat. Mus., p. 148, 1893.

² Mr. Bollman was correct in identifying *Geophilus cephalicus*, Wood, with this species. I have examined the type in the British Museum.

is "reddish-ferruginous," and the head of *Cryptops* is "reddish-brown," and the body "white." Thus, if we take Say's statement at face value, its application is not so difficult. Only one reddish-brown *Geophilus* is known from Europe and North Africa, *Geophilus ferrugineus*, C. L. Koch. In view of the fact that no Geophilidæ common to the two continents had then been reported, it was something of a surprise to me, three or four years since, to find a specimen of *Geophilus ferrugineus* in a bottle of Myriapoda collected in the vicinity of Philadelphia. This was dissected and carefully compared with the descriptions of the various European authors, and with Swedish specimens of *G. ferrugineus*, also dissected. In 1893 I collected several specimens near St. Michaels, on the eastern peninsula of Maryland, some of them under stones and rotting wood, some under bark of decaying locust (*Robinia*). The reddish-brown color of the living animals is noticeably different from that of any other Geophilidæ I have collected in North America.

This species corresponds even in habitat with *Mecistocephalus fulvus*, Wood. The only discrepancy of importance seems to be that of the number of legs. Wood gives 57, while none of my American specimens have more than 49, most of them 47.¹ In the Canary Islands, however, I collected numerous examples of this species with 57, and some with 59 legs. That Wood should describe this species under *Mecistocephalus* need not be a matter of surprise if we consider that he was dealing with the type of that genus. Thus the genus *Pachymerium*, C. L. Koch, being founded on the same species, is identical with *Mecistocephalus*, Newport. It is an error to cite Newport as the author of the genus as employed by recent writers. As constituted by Newport it was based entirely upon the length of the cephalic lamina, and was no more natural a group than the genera of C. L. Koch; to have been consistent, Meinert should have set it aside, as he did Koch's genera. However, *G. attenuatus* is a species differing from *Geophilus* as represented by *carpophagus* sufficiently to merit generic recognition. The synonymy of the genus and the species will then stand as follows:

Genus MECISTOCEPHALUS, Newport.

Mecistocephalus, NEWPORT, Proc. Zool. Soc., London, CXIX, p. 177,² 1842.

Pachymerium, C. L. KOCH, System der Myriapoden, pp. 85, 187, 1847.

Geophilus (pp.) MEINERT, LATZEL, etc.

Cephalic lamina long and narrow; frontal lamina distinct; basal lamina narrow; prosternal teeth evident; claw of prehensorial feet, with a strong tooth at base; coxa toothed. Ventral pores inconspicuous; last sternum narrow; pleural pores numerous, pigmented; anal legs slightly crassate in the male, clawed. Anal pores present.

¹ It is evident from the fact that Wood frequently ascribes an even number of legs to his Geophilidæ that they were not too carefully counted. It is also easy to make a mistake of ten in counting.

² Latzel's citation of Trans. Linn. Soc. London, XIX, 1844, for this genus (Öst.-Ung. Myr. I, p. 15), is an error which that author has himself corrected on p. 160.

Type.—*Mecistocephalus attenuatus* (Say), 1819, the synonymy of which is as follows:

Geophilus ferrugineus, C. L. Koch, Deutschl. Crust. Myr. u. Arach., 1835.

Pachymerium ferrugineum (C. L. Koch), System der Myriap., p. 187, 1847.

Mecistocephalus fulvus (Wood), Journ. Acad. Nat. Sci. Phila., V. p. 41, 1863.

Distribution.—Europe, North Africa, Canary Islands, Eastern North America.

This disposition leaves the species hitherto called *Mecistocephalus* in need of a generic name, and *Dicellyphilus* is proposed for the species congeneric with *Mecistocephalus limatus*, Wood, in allusion to the forked chitinous thickening of the ventral plates. The species which this change affects are: *limata* (Wood), *breviceps* (Meinert), *melanonotus* (Wood), *quadrata* (Wood). This genus is further defined by the frontal lamina being completely chitinized above the labrum, the margin of the labrum laciniate, and the cephalic lamina without a claw-like chitinous callosity at the sinus of the frontal lamina.

The generic name *Lamnonyx* may be applied to the species which have the cephalic lamina incompletely chitinized, the margin of the labrum entire, and a claw at the anterior corners of the cephalic lamina below. *Lamnonyx leonensis*¹ may be taken as the type. The claw-like structure of the cephalic lamina seems not to have been observed previously, but as I find it on all the specimens at hand from the Eastern Continent, the species to be referred to *Lamnonyx*, provisionally at least, are the following: *carniolensis* (C. L. Koch), *castaneiceps* (Haase), *gigas* (Haase), *japonicus* (Meinert), *leonensis*, *maxillaris* (Gervais), *punctifrons* (Newport), *punctilabrum* (Newport), *spissus* (Wood), *tenniculus* (L. Koch), synonyms having been omitted. These species are mostly in need of study which shall make known the character of the mouth parts.

Mecistocephalus microporus, Haase, is apparently generically distinct from the others by reason of the very numerous segments, the enormous plerura, and peculiar conformation of the posterior seta; it may stand as the type of a new genus, to be called *Megethmus*. The genus *Dicellyphilus* may be taken as the type of a distinct family, separable from the Geophilidæ and Notiphilidæ by many characters, among which are the following: Body attenuate caudad; head large, long, and narrow; frontal lamina always distinct, more or less chitinized above the labrum. Cephalic lamina not concealing the prehensors; a claw-like callosity at the sinus of the frontal lamina. Labrum entirely free, tripartite, the median part very small, the lateral parts large, transversely carinate. Laminae fulcraentes linear, extending back past the maxillary sternum as chitinous margins of the cephalic lamina. Mandibles with numerous pectinate lamellæ; no dentate lamellæ. Labial sternum always divided, simple; labial palpus and interior labial process subsimilar in shape, distinct, consisting of a basal portion

¹ A new species from Sierra Leone and Liberia, in the National Museum collection.

(joint?), supplemented by a spatulate hyaline portion. Maxillary sternum entire and distinct; maxillary palpus slender; claw simple; basal joint subequal in length to the other two taken together. Prehensorial sternum without chitinous lines. Pleura of the prehensorial sternum divided by chitinous ridges into three areas. Sterna with a median anteriorly bifurcate chitinous thickening. Ventral pores wanting. Last sternum very short; last pleurae very large and long, with numerous pigmented pores. Anal pores present; anal legs without claws. Number of segments constant on both sexes of each species.

In most of these characters, the *Dicelophilidæ* approach the *Scolopendridæ* rather than the other *Geophiloidæ*. Especially is this the case with the mouth parts, the lack of ventral pores, the last segment, and the constant number of segments.